AUTHOR INDEX

Ahmed, N., see Nakanishi, S., 139 Anthonisen, N.R., see Filuk, R.B., 163

Band, D.M., see Linton, R.A.F., 49
Bartlett, Jr., D., see Furilla, R.A., 311
Berezanski, D.J., see Filuk, R.B., 163
Bisgard, G.E., see Engwall, M.J.A., 335
Blank, S., Chen, V. and Ianuzzo, C.D., Biochemical characteristics of mammalian diaphragms, 115

Boutilier, R.G., see Ferguson, R.A., 65

Carù, B., see Cerretelli, P., 355
Cerretelli, P., Grassi, B., Colombini, A., Carù, B. and Marconi, C., Gas exchange and metabolic transients in heart transplant recipients, 355

Cerretelli, P., see Marconi, C., 1 Chen, V., see Blank, S., 115 Cherniack, N. S., see Mitra, J., 35 Cherniack, N. S., see Overholt, J. L., 299 Chiang, S. T., see Green, J., 239

Claireaux, G., Thomas, S., Fievet, B. and Motais, R., Adaptive respiratory responses of trout to acute hypoxia. II. Blood oxygen carrying properties during hypoxia, 91

Claireaux, G., see Fievet, B., 99 Claireaux, G., see Thomas, S., 77 Colombini, A., see Cerretelli, P., 355 Cooper, D.M., see Springer, C., 55

Davis, C., see Kannan, M.S., 15 De Troyer, A., see Estenne, M., 151 Delpierre, S., see Lama, A., 265 Demedts, M., see Teppema, L.J., 373

Easton, P.A., see Filuk, R.B., 163
Edwards, W., see Rorie, D.K., 211
Egginton, S., Turek, Z. and Hoofd, L.J.C., Differing patterns of capillary distribution in fish and mammalian skeletal muscle, 383
Engwall, M.J.A., Vidruk, E.H., Nielsen, A.M.

and Bisgard, G.E., Response of the goat

carotid body to acute and prolonged hypercapnia, 335

Estenne, M., Ninane, V. and De Troyer, A., Triangularis sterni muscle use during eupnea in humans: effect of posture, 151

Ferguson, R.E. and Boutilier, R.G., Metabolic energy production during adrenergic pH regulation in red cells of the Atlantic salmon, Salmo salar, 65

Fievet, B., Claireaux, G., Thomas, S. and Motais, R., Adaptive respiratory responses of trout to acute hypoxia. III. Ion movements and pH changes in the red blood cell, 99

Fievet, B., see Claireaux, G., 91 Fievet, B., see Thomas, S., 77

Filuk, R.B., Berezanski, D.J., Easton, P.A. and Anthonisen, N.R., High-frequency oscillatory ventilation may increase airway closure, 163

Fuller, S.D. and Robinson, N.E., Mechanism of increased collateral airway resistance during inhomogeneous inflation of excised dog lungs, 253

Furilla, R. A. and Bartlett, Jr., D., Intrapulmonary receptors in the garter snake (*Thamnophis sirtalis*), 311

Grassi, B., see Cerretelli, P., 355
Green, J., Chiang, S.T., Wang, W.F., Yang, Y.J.
and Kao, Y.C., Volume and pressure during
transient added resistance, 239

Heisler, N., see Marconi, C., 1 Hiramoto, T., see Nakanishi, S., 139 Hoofd, L.J.C., see Egginton, S., 383 Hughes, J.M.B., see Maxwell, D.L., 275

Ianuzzo, C.D., see Blank, S., 115

Jammes, Y., see Lama, A., 265 Johnson, R.R., see Tøien, Ø., 345

Kannan, M.S. and Davis, C., Mode of action of calcium antagonists on responses to

spasmogens and antigen challenge in human airway smooth muscle, 15

Kao, Y.C., see Green, J., 239

Kaye, M.P., see Rorie, D.K., 211

Ko, W.-C. and Lai, Y.-L., The tracheal nonadrenergic inhibitory system during antigen challenge, 129

Lai, Y.-L., see Ko, W.-C., 129

Lama, A., Delpierre, S. and Jammes, Y., The effects of electrical stimulation of myelinated and non-myelinated vagal motor fibres on airway tone in the rabbit and the cat, 265

Linton, R. A. F. and Band, D. M., The relationship between arterial pH and chemoreceptor firing in anaesthetized cats, 49

Marconi, C., Heisler, N., Meyer, M., Weitz, H., Pendergast, D.R., Cerretelli, P. and Piiper, J., Blood flow distribution and its temporal variability in stimulated dog gastrocnemius muscle, 1

Marconi, C., see Cerretelli, P., 355

Mathew, O.P., Sant'Ambrogio, F.B. and Sant'Ambrogio, G., Laryngeal paralysis on receptor and reflex responses to negative pressure in the upper airway, 25

Maxwell, D. L., Hughes, J. M. B. and Nye, P. C. G., The effect of almitrine bismesylate on the steady-state response of arterial chemoreceptors to CO₂ and O₂ in the cat, 275

Meyer, M., see Marconi, C., 1

Milsom, W.K., see Powell, F.L., 285

Mitchell, G.S., see Powell, F.L., 285

Mitra, J., Prabhakar, N.R., Overholt, J.L. and Cherniack, N.S., Respiratory and vasomotor responses to focal cooling of the ventral medullary surface (VMS) of the rat, 35

Mitra, J., see Overholt, J.L., 299

Mortola, J.P., see Xu, L., 177

Motais, R., see Claireaux, G., 91

Motais, R., see Fievet, B., 99

Motais, R., see Thomas, S., 77

Nakanishi, S., Hiramoto, T., Ahmed, N. and Nishimoto, Y., Almitrine enhances in low dose the reactivity of pulmonary vessels to hypoxia, 139

Nakazawa, S.-i., see Tazawa, H., 199

Nielsen, A.M., see Engwall, M.J.A., 335

Ninane, V., see Estenne, M., 151

Nishimoto, Y., see Nakanishi, S., 139

Nye, P.C.G., see Maxwell, D.L., 275

Nye, P.C.G., see Paterson, D.J., 229

Okuda, A. and Tazawa, H., Gas exchange and development of chicken embryos with widely altered shell conductance from the beginning of incubation, 187

Okuda, A., see Tazawa, H., 199

Overholt, J.L., Mitra, J., Van Lunteren, E., Prabhakar, N.R. and Cherniack, N.S., Naloxone enhances the response to hypercapnia of spinal and cranial respiratory nerves, 299

Overholt, J.L., see Mitra, J., 35

Paganelli, C.V., see Tøien, Ø., 345

Paterson, D.J. and Nye, P.C.G., The effect of beta adrenergic blockade on the carotid body response to hyperkalaemia in the cat, 229

Pendergast, D.R., see Marconi, C., 1

Piiper, J., see Marconi, C., 1

Powell, F. L., Milsom, W. K. and Mitchell, G. S., Effects of intrapulmonary CO₂ and airway pressure on pulmonary vagal afferent activity in the alligator, 285

Prabhakar, N.R., see Mitra, J., 35

Prabhakar, N.R., see Overholt, J.L., 299

Rahn, H., see Tøien, Ø., 345

Robinson, N.E., see Fuller, S.D., 253

Rochette, F., see Teppema, L.J., 373

Rorie, D. K., Tyce, G. M., Edwards, W., Sittipong, R. and Kaye, M. P., Chronic hypoxia alters structure and transmitter dynamics in dog pulmonary artery, 211

Sant'Ambrogio, F.B., see Mathew, O.P., 25

Sant'Ambrogio, G., see Mathew, O.P., 25

Sittipong, R., see Rorie, D.K., 211

Springer, C., Cooper, D.M. and Wasserman, K., Evidence that maturation of the peripheral chemoreceptors is not complete in childhood, 55

Tazawa, H., Nakazawa, S.-i., Okuda, A. and Whittow, G. C., Short-term effects of altered shell conductance on oxygen uptake and hematological variables of late chicken embryos, 199

Tazawa, H., see Okuda, A., 187

Teppema, L.J., Rochette, F. and Demedts, M., Ventilatory response to carbonic anhydrase inhibition in cats: effects of acetazolamide in intact vs peripherally chemodenervated animals, 373

Thomas, S., Fievet, B., Claireaux, G. and Motais, R., Adaptive respiratory responses of trout to acute hypoxia. I. Effects of water ionic composition on blood acid-base status response and gill morphology, 77

Thomas, S., see Claireaux, G., 91

Thomas, S., see Fievet, B., 99

Tøien, Ø., Paganelli, C.V., Rahn, H. and Johnson, R.R., Diffusive resistance of avian eggshell pores, 345

Turek, Z., see Egginton, S., 383

Tyce, G.M., see Rorie, D.K., 211

Van Lunteren, E., see Overholt, J.L., 299 Vidruk, E.H., see Engwall, M.J.A., 335

Wang, W. F., see Green, J., 239
Wasserman, K., see Springer, C., 55
Weitz, H., see Marconi, C., 1
West, J. B., Rate of ventilatory acclimatization to extreme altitude, 323
Whittow, G. C., see Tazawa, H., 199

Xu, L. and Mortola, J.P., Development of the chick embryo: effects of egg mass, 177

Yang, Y.J., see Green, J., 239



SUBJECT INDEX

Abdominal muscles, 151	Beta-receptor, 229
Acclimatization to high altitude, 323	Blood
Acetazolamide, 373	red cell
Acid-base balance, 77, 91, 99, 199	- count, 91
intracellular pH, 65, 91	Blood flow
metabolic acidosis, 77	- in tissue, 1
Aging, 355	Blood gas
Air cell, 187	oxygen affinity, 91, 99
Airway receptors, 25, 129	Bronchomotricity, 15, 129, 265
Airway resistance, 163, 239, 253, 265	
Allometric relations	Calcium, 15
respiratory -, 177, 365	Capillary circulation, 383
Almitrine, 139, 275	Carbon dioxide
Altitude	- sensitive receptors in lung, 285, 311
high - acclimatization, 323	ventilatory response to -, 35, 275, 299, 311, 335
Alveolar gas	Carbonic anhydrase, 373
- composition, 323	Cardiac output, 355
Anaerobic metabolism, 65, 355	Carotid sinus nerve, 49, 55, 229, 275, 335
Animals	Catecholamines, 65, 211
alligator, 285	Cell respiration, 115
avian embryo, 177	Chemoreceptors
cat, 49, 229, 265, 275, 299, 373	arterial -, 49, 55, 139, 229, 335, 373
chicken, 177, 187, 199	mechanism of excitation, 275
cow, 115	central -, 373
dog, 1, 25, 139, 211, 253	Chest wall
eel, 383	- mechanics, 151
garter snake, 311	Chorioallantois, 199
goat, 335	Conductance, 177, 187, 199, 345
guinea-pig, 115, 129	Control of breathing, 25, 55, 311
humans, 15, 151, 163, 239, 323, 355	chemoreceptors
infants, 55	arterial, 49, 55, 139, 229, 335, 373
mouse, 115	central, 373
pig, 115	- in muscular exercise, 55, 229, 355
rabbit, 115, 265	Diaphragm, 115, 151
rat, 35, 383	Diffusive conductance, 177, 187, 199, 345
reptilia, 285	Distribution
salmon, 65	- of ventilation, 253
trout, 77, 91, 99	Dopamine, 211
Arterial blood	
- gas tensions, 77, 199	Egg shell, 177, 187, 345
Atropine, 129, 265	Enzymes
Autonomic nervous system, 35	respiratory –, 115
Avian embryo, 177, 187	Erythrocyte
	see Red blood cell

Esophageal pressure, 239 Exercise, muscular, 1, 55 control of breathing, 55, 229 lactate, 355

Gill, 77 Glucose, 115 Growth, 187

Hatching, 177, 355
Hematocrit, 199
Hemoglobin, 199
Hexamethonium, 265
High-frequency ventilation, 163
Hill number, 91.
Histamine, 15
Hypoglossal nerve, 299
Hypoxia, 77, 91, 99, 139, 211
pulmonary circulation, 139

Incubation of egg, 177, 187 Inhomogeneity
– of ventilation, 253 Intracellular pH, 65, 91 Ionic exchanges, 91, 99

Lactate
blood, 355
Larynx, 25
Leukotriene, 15
Lung
mechanoreceptors, 25, 285, 311

Mechanics of breathing, 151
airway resistance, 163, 239, 253, 265
chest wall, 151
diaphragm, 151
Metabolic acidosis, 77
Methods in respiratory physiology
transient, 355
Mitochondrion, 163
Morphometry, 383
Mountain sickness, 323
Muscle
respiration of skeletal, 1, 383
Muscular exercise, see Exercise, muscular

Naloxone, 299 Neuropeptide, 265

Opiates, 299
Oxygen, see Altitude, Diffusion, Hypoxia and Tissue respiration

Oxygen-carbon dioxide tension diagram
– in gas, 323
Oxygen consumption, 177, 187, 199
– of blood, 65
maximal –, 355

P₅₀, 91,99 pH, see Acid-base balance Phrenic nerve, 35, 299 Posture, 151 Potassium, 229 Propranolol, 129, 229, 265 Pulmonary circulation, 139, 211 Pulmonary receptors, 25, 285, 311

Red blood cell, 65, 99, 199
Red cell
- count, 91
Regulation of respiration, see Control of breathing
Respiratory muscles, 151
Respiratory reflexes, 49
Respiratory stimuli
catecholamines, 229
see also Control of breathing

Skeletal muscle, 1, 383 Smooth muscle, 15, 211 Stretch receptors, 25, 285, 311 Sulfur hexafluoride, 253

Temperature
effect of body – on breathing, 311
Tissue respiration, 115, 383
Trachea, 129
Transplantation, 355

Vagal afferents or efferents, 265
Vagus nerve
block or section of -, 35
Ventilation distribution, 253
Ventilatory chemoreflexes, 49
Ventilatory response to hypercapnia, 35, 275, 299, 311, 335
Ventilatory response to hyperoxia, 55
Ventilatory response to hyperoxia, 55
Ventilatory response to hypoxia, 55, 77, 91, 99, 139, 211, 275

Water loss, 345

133Xenon, 163

